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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/599,453

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EXAMINER

COLEMAN, KEITH A

ART UNIT

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3747

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/599,453	Applicant(s) KONAKAWA ET AL.	
	Examiner KEITH COLEMAN	Art Unit 3747	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/28/2006</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 8, 10 12, 13, 15, and 17-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Rivere (US Patent No. 3,868,936).

With regards to claim 1, the patent to Rivere discloses a fuel supply apparatus comprising an intake chamber (i.e. the interior chamber of 2 and 9, See Figure 2) including an inlet (i.e. the top portion of the intake 9), through which an air is introduced (Col. 1, Line 23), and an outlet (i.e. the bottom portion of the intake 2), through which the introduced air is led to an engine (Col. 1, Lines 25-27), a rectifying member (i.e. support 10, Col. 3, Lines 65-68) that rectifies an air current flowing from the inlet in the intake chamber (2) to the outlet, and an injector (4, Col. 3, Line 13) that jets a fuel to the air current in the intake chamber (2 and 9).

With regards to claim 2, the patent to Rivere discloses wherein a flow passage (appears to be flow passage in 2 and 9) leading to the outlet from the inlet is formed in the intake chamber (2 and 9, See Figure 2), and the rectifying member (10) comprises a

rectifying wall (i.e. the horizontal and vertical walls of 10) extending along the flow passage (See Figure 2).

With regards to claim 3, the patent to Rivere discloses wherein the rectifying wall (10) includes a wide portion (i.e. the interior chamber of 10 widens at the top end, See Figure 2), of which a width in a direction perpendicular to that direction (See Figure 2), in which the rectifying wall (10) extends, is larger than that of the remaining portion (See Figure 2).

With regards to claim 4, the patent to Rivere discloses wherein the injector (4) includes an in-chamber portion (the tip of the nozzle appears to be inside the chamber 9 in Figure 2) arranged in the intake chamber (2 and 9), the rectifying wall (10) is arranged upstream of the in-chamber portion (the top portion of nozzle 3 is upstream), and the wide portion of the rectifying wall (10) is positioned at a downstream end of the rectifying wall (10) and has a larger width than that of the in-chamber portion (the injector nozzle protrudes into chamber 2 and support 10, the top portion of 10 appears to be wider than the nozzle tip portion as shown in Figure 2).

With regards to claim 5, the patent to Rivere discloses wherein the injector (4) includes an in-chamber portion arranged in the intake chamber (9), the rectifying wall (10) is arranged downstream of the in-chamber portion (See Figure 2), and the wide portion of the rectifying wall (10) is positioned at an upstream end of the rectifying wall

(10, appears to be wider in Figure 2) and the wide portion of the rectifying wall has substantially the same width as that of the in-chamber portion (See Figure 2).

With regards to claim 6, the patent to Rivere discloses wherein the injector (4) includes an in-chamber portion (the tip of the nozzle appears to be inside the chamber 9 in Figure 2) arranged in the intake chamber (2 and 9), and the rectifying wall (10) covers the in-chamber portion (See Figure 2), supports the in-chamber portion (Col. 3, Lines 65-67), and extends downstream of the in-chamber portion from upstream thereof (See Figure 2).

With regards to claim 8, the patent to Rivere discloses wherein a center of the rectifying wall (10 comprising venturi 3, Col. 3, Lines 60-67) in a direction perpendicular to that direction, in which the rectifying wall (10) extends, is positioned inside the inlet (i.e. the top portion of the air intake 2).

With regards to claim 10, the patent to Rivere discloses wherein a center of the rectifying wall (10) in a direction perpendicular to that direction, in which the rectifying wall extends (10 extends to venturi 3), is positioned outside the outlet (i.e. upstream of the outlet of the intake 2 and 9).

With regards to claim 12, the patent to Rivere discloses further comprising a partition (the horizontal and vertical walls of 10) provided in the intake chamber to compartment a main chamber (9), in which a flow passage extending from the inlet to the outlet is formed, and a separate chamber (2) partitioned from the main chamber (1, See Figure 2), the partition being formed with a through-hole (i.e. opening between 2 and 9 shown in Figure 2), which connects between the separate chamber (top chamber 2) and the main chamber (9), and wherein the injector (4) is supported in the separate chamber (i.e. top chamber 2) by the partition to jet a fuel into the main chamber (9) from the through-hole (i.e. opening between 2 and 9 shown in Figure 2), and the rectifying member (10) is formed by the partition.

With regards to claim 13, the patent to Rivere discloses wherein the injector (4) comprises a nozzle (appears to be a nozzle for injector 4 in Figure 2) inserted into the through-hole (i.e. spray holes 12), and further comprising a sealing member (vertical walls of 10) to seal a clearance between the through-hole (12) and the nozzle (i.e. injector nozzle 4).

With regards to claim 15, the patent to Rivere discloses further comprising an intake passage (i.e. intake passage of 2 and 9) projecting into the intake chamber (chamber of 2 and 9) from the outlet and having an opening opened to the intake chamber (2, See Figure 2), and wherein the rectifying member (10) comprises a wall

surface (i.e. the inner wall surface in contact with venturi 3), by which an air current from the inlet is led to the opening (via venturi 3), and a space (i.e. the inner space of venturi) is formed radially outwardly of the opening in the intake chamber (See Figure 2).

With regards to claim 17, the patent to Rivere discloses wherein the rectifying member (10) comprises a compartment surface (i.e. the inner wall surface in contact with venturi 3) that compartments the space (See Figure 2).

With regards to claim 18, the patent to Rivere discloses wherein the rectifying member (10) is composed of a rectifying plate projecting toward the opening (the bottom part of the vertical walls or plates of support 10 appear to project towards the opening in Figure 2).

With regards to claim 19, the patent to Rivere discloses wherein a clearance (i.e. the inner space of 10) is formed between the rectifying member (10) and the opening in a direction, in which the opening is opened.

With regards to claim 20, the patent to Rivere discloses wherein the injector (4) comprises a nozzle (i.e. injector nozzle 4), and at least a part of the wall surface (the surface of the bottom part of the vertical and horizontal walls are below the injector 4 in Figure 2) is positioned downstream of the nozzle and upstream of the opening (See Figure 2).

With regards to claim 21, the patent to Rivere discloses wherein the wall surface (the surfaces of the bottom part of the vertical and horizontal walls are below the injector 4 in Figure 2) is positioned on an opposite side to the inlet with the opening as reference (See Figure 2).

With regards to claim 22, the patent to Rivere discloses further comprising an intake passage (i.e. passage of 2 and 9) projecting into the intake chamber (chamber of 2 and 9) from the outlet and having an opening opened to the intake chamber (2 and 9, See Figure 2), and wherein the rectifying member (10) comprises a first wall surface (i.e. the left vertical wall of 10) extending toward the opening (i.e. bottom portion of 2), and a second wall (i.e. the right vertical wall of 10) surface positioned radially outwardly of the opening relative to the first wall surface and separated from an inner surface (i.e. wall surface of venturi 3) of the intake chamber (2 and 9).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 23, 24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rivere (US Patent No. 3,868,936) in view of Walker (US Patent No. 3,374,777)

With regards to claim 23, the patent to Rivere discloses all the limitations of the claimed subject matter except positively disclosing a vehicle comprising the fuel supply apparatus.

Walker discloses a vehicle (Col. 1, Line 9) comprising the fuel supply apparatus (10).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the fuel apparatus of Rivere with a vehicle in view of the teaching to Walker, in order to control fuel flow of an engine (Col. 1, Lines 8-11 from Walker)

With regards to claim 24, the combination of Rivere and Walker discloses all the limitations of the claimed subject matter including Rivere disclosure of wherein the outlet (i.e. the bottom portion of 2) is positioned rearwardly of the inlet (appears to be upstream of the air inlet of chamber 9 in Figure 2), and the rectifying member (10) comprises a rectifying wall (i.e. vertical walls of 10) extending substantially in a longitudinal direction.

With regards to claim 26, the combination of Rivere and Walker discloses all the limitations of the claimed subject matter including Rivere disclosure of wherein the outlet (i.e. the bottom portion of 2) is positioned rearwardly of the inlet (appears to be upstream of the air inlet in Figure 2), and the rectifying member (10) comprises a rectifying wall (i.e. the horizontal walls of 10 in Figure 2) extending substantially in a left and right direction (See Figure 2).

Claims 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rivere (US Patent No. 3,868,936) in view of Marsee (US Patent No. 4,016,845)

With regards to claim 9, the patent to Rivere discloses all the limitations of the claimed subject matter except positively disclosing wherein the intake chamber includes a plurality of outlets, and the rectifying walls are provided in plural corresponding to each of the plurality of outlets, and the plurality of rectifying walls are arranged to be spaced from one another.

Marsee discloses wherein the intake chamber includes a plurality of outlets (i.e. outlets of barrels 2 and 3, Col. 3, Lines 4-5), and the rectifying walls (i.e. walls of barrels 2 and 3, Col. 3, Lines 4-5) are provided in plural corresponding to each of the plurality of outlets, and the plurality of rectifying walls are arranged to be spaced from one another (See Figures 2 and 4).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the intake of Rivere with wherein the intake chamber includes a plurality of outlets, and the rectifying walls are provided in plural corresponding to each of the plurality of outlets, and the plurality of rectifying walls are arranged to be spaced from one another in view of the teaching to Marsee, in order to provide turbulent flow and reduction in exhaust carbons (Col. 2, Lines 20-25 from Marsee)

With regards to claim 11, the patent to Rivere discloses wherein the intake chamber includes a plurality of outlets, and a center of the rectifying wall in a direction perpendicular to that direction, in which the rectifying wall extends, is positioned between the plurality of outlets.

Marsee discloses wherein the intake chamber (1) includes a plurality of outlets (i.e. outlets of barrels 2 and 3, Col. 3, Lines 4-5), and a center of the rectifying wall (i.e. the center wall between barrel 2 and 3) in a direction perpendicular to that direction, in which the rectifying wall (i.e. the center wall between barrel 2 and 3) extends, is positioned between the plurality of outlets (i.e. the center wall between barrel 2 and 3).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the intake of Rivere with wherein the intake chamber includes a plurality of outlets, and a center of the rectifying wall in a direction perpendicular to that direction, in which the rectifying wall extends, is positioned between the plurality of outlets in view of the teaching to Marsee, in order to provide turbulent flow and reduction in exhaust carbons (Col. 2, Lines 20-25 from Marsee)

Claims 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rivere (US Patent No. 3,868,936) in view of Walker (US Patent No. 3,374,777) as applied to claim 23 above, and further in view of Marsee (US Patent No. 4,016,845)

With regards to claim 25, the combination of Rivere and Walker discloses all the limitations of the claimed subject matter except positively disclosing wherein the intake

chamber comprises a plurality of outlets aligned in a left and right direction, and the rectifying member comprises a rectifying wall extending substantially in a longitudinal direction.

Marsee discloses wherein the intake chamber (1) comprises a plurality of outlets (i.e. outlets of barrels 2 and 3, Col. 3, Lines 4-5) aligned in a left and right direction (See Figures 2 and 4), and the rectifying member (i.e. support members holding venturis 4 and 5) comprises a rectifying wall (i.e. vertical walls of barrels 2 and 3) extending substantially in a longitudinal direction (See Figures 2 and 4).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the intake of the combination of Rivere and Walker with wherein the intake chamber comprises a plurality of outlets aligned in a left and right direction, and the rectifying member comprises a rectifying wall extending substantially in a longitudinal direction in view of the teaching to Marsee, in order to provide turbulent flow and reduction in exhaust carbons (Col. 2, Lines 20-25 from Marsee)

With regards to claim 27, the combination of Rivere and Walker discloses all the limitations of the claimed subject matter except positively disclosing wherein the intake chamber comprises a plurality of outlets aligned in a left and right direction, and the rectifying member comprises a rectifying wall extending substantially in a left and right direction.

Marsee discloses wherein the intake chamber (1) comprises a plurality of outlets (i.e. outlets of barrels 2 and 3, Col. 3, Lines 4-5) aligned in a left and right direction (See

Figures 2 and 4), and the rectifying member (i.e. support members holding venturis 4 and 5) comprises a rectifying wall extending substantially in a left and right direction (i.e. support members holding venturis 4 and 5, See Figure 4).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the intake of the combination of Rivere and Walker with wherein the intake chamber comprises a plurality of outlets aligned in a left and right direction, and the rectifying member comprises a rectifying wall extending substantially in a left and right direction in view of the teaching to Marsee, in order to provide turbulent flow and reduction in exhaust carbons (Col. 2, Lines 20-25 from Marsee)

Claims 7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rivere (US Patent No. 3,868,936) in view of Coanda (US Patent No. 2,907,557).

With regards to claim 7, the patent to Rivere discloses all the limitations of the claimed subject matter except positively disclosing wherein at least a part of the rectifying wall is in the form of a symmetric blade.

Coanda discloses wherein at least a part of the rectifying wall (61) is in the form of a symmetric blade (appears to be a blade in Figure 10).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the rectifying wall of Rivere with wherein at least a part of the rectifying wall is in the form of a symmetric blade in view of the teaching to Coanda, in order to produce laminar flows (Col. 2, Lines 5-18 from Coanda)

With regards to claim 14, the patent to Rivere discloses all the limitations of the claimed subject matter except positively disclosing wherein the intake chamber comprises an air cleaner receiving therein an element, which purifies an air, and the rectifying member comprises a rectifying wall extending in a direction intersecting a longitudinal direction of the element.

Coanda discloses wherein the intake chamber comprises an air cleaner (i.e. air filter not shown, Col. 4, Lines 50-53) receiving therein an element (i.e. the filter), which purifies an air, and a rectifying member (i.e. portion 61 in Figure 10) comprises a rectifying wall extending in a direction intersecting a longitudinal direction of the element (appears to be extending in the longitudinal direction in Figure 10).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the supporting tube or carburetor of Rivere with wherein the intake chamber comprises an air cleaner receiving therein an element, which purifies an air, and the rectifying member comprises a rectifying wall extending in a direction intersecting a longitudinal direction of the element in view of the teaching to Coanda, in order to purify air.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rivere (US Patent No. 3,868,936) in view of Bishop et al. (US Patent No. 3,050,376)

With regards to claim 16, the patent to Rivere discloses all the limitations of the claimed subject matter except positively disclosing further comprising a blow-by gas passage that provides communication between an interior of a crankcase of the engine and the space.

Bishop et al. discloses further comprising a blow-by gas passage (21) that provides communication between an interior of a crankcase (via breather tube 21, Col. 3, Lines 28-31) of the engine (17) and a space (i.e. interior of the carburetor found in Figure 3).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the supporting tube or carburetor of Rivere with a blow-by gas passage that provides communication between an interior of a crankcase of the engine and the space in view of the teaching to Bishop et al., in order to decrease atmospheric pollution (Col. 4, Lines 14-20 from Bishop et al.)

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Taguchi et al. (US Patent No. 7,198,032) shows the current state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH COLEMAN whose telephone number is (571)270-3516. The examiner can normally be reached on 5:30-4:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Cronin can be reached on (571)272-4536. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KAC
/K. C./
Examiner, Art Unit 3747

/Stephen K. Cronin/
Supervisory Patent Examiner, Art Unit 3747